

ABSTRACT

A method facilitates generally simultaneously fabricating a number of shallow trench isolation structures such that some selected ones of the shallow trench isolation structures have rounded corners and other selected ones of the shallow trench isolation structures do not have rounded corners. The method includes forming patterned photoresist over a hard mask so that portions of the hard mask are exposed over a portion of a cell region and over a portion of a periphery region, and then removing the exposed hard mask layer in the periphery region while removing a portion of the exposed hard mask layer in the cell region. A trench having rounded corners is then partially formed in the periphery region and more of the hard mask layer is removed in the cell region, before the trench in the periphery region is deepened while a trench in the cell region is formed.